

REMARKS

These amendments and remarks are being filed in response to the Office Action dated June 3, 2004. For the following reasons this application should be allowed and the case passed to issue.

No new matter is introduced by this amendment. New claim 19 is supported by original claims 1 and 5, and the specification (page 8, line 35 to page 11, line 4). Figures 3 and 4 clearly disclose the stepwise change of the local porosity as claimed in new claim 20. Support for new claim 21 is found in original claim 4. New claim 22 is supported by original claim 5 and Figures 3 and 4. Support for new claim 23 is found in original claim 5. New claim 24 is supported by Figure 2. Figures 3 and 4 and original claim 11 support new claim 25. Support for new claim 26 is found in Figures 3 and 4 and the specification (page 10, lines 16 and 17). New claim 27 is supported by original claim 1, Fig. 3, and the specification (page 9, line 13 and page 10, lines 23-25). Support for new claim 28 is found in original claim 3, Figures 3 and 4, and the specification (page 9, line 17 and page 10, lines 23-25). The specification (page 8, line 12) and Fig. 3 support new claim 29. New claim 30 is supported by the specification (page 8, line 4) and original claim 1. Original claim 2 provides support for new claim 31. The specification (page 10, lines 29, 35, and 36, and page 11, line 2) and original claim 6 provide support for new claim 32. New claim 33 is supported by original claim 7. Support for new claim 34 is found in original claim 8. Original claim 9 supports new claim 35. New claim 36 is supported by original claim 10. Support for new claims 37 and 38 is found in original claims 11 and 12, respectively. Original claims 1 and 5 support new claim 39. New claim 40 is supported by original claims 1 and 6. Support for new claim 41 is found in original claims 11 and 12.

The specification is amended to correct minor informalities and to correct an inadvertent use of duplicate reference numbers in the drawings. It is clear from the instant disclosure that “for each

of layers 20A and 20B to have a different porosity” (page 9, lines 35 and 36) refers to a mean porosity.

New claims 19-41 are pending in this application. Original claims 1-18 have been canceled in this response.

Claim Objections

Claims 4, 6, and 17 are objected to because of informalities. These objections are traversed, and reconsideration and withdrawal thereof respectfully requested.

Claims 4, 6, and 17 have been canceled, and the new claims 19-41 have been drafted to address the Examiner’s objections.

Claim Rejections Under 35 U.S.C. § 112

Claim 5 is rejected under 35 U.S.C. § 112, second paragraph, as indefinite because there is not a defined reference point for establishing a lower porosity. This rejection is traversed, and reconsideration and withdrawal respectfully requested.

Claim 5 has been canceled. New claim 39 has been drafted in accordance with the Examiner’s recommendation to overcome the indefiniteness rejection.

Claim Rejections Under 35 U. S. C. §§ 102 and 103

Claims 1-3, 7-10, and 13-17 were rejected under 35 U. S. C. 102(e) as being anticipated by Kawakami et al. (U.S. Pat. No.6,432,585).

Claims 4, 11, 13, 14, 15, 16, and 18 were rejected under 35 U. S. C. 103(a) as being unpatentable over Kawakami et al. in view of Wang et al. (U.S. Pat. No.6,159,636).

These rejections are traversed, and reconsideration and withdrawal thereof respectfully requested. Claims 1-18 have been canceled. New claims 19-41 are distinguishable over the cited

prior art. The following is a comparison between the instant invention as claimed, and the cited prior art

An aspect of the present invention, per claim 1, is a rechargeable lithium ion battery comprising a positive electrode comprising a collecting electrode and an active material layer formed on the collecting electrode. The active material layer contains particles of a positive electrode active material within a prescribed particle size range. The active material layer has a thickness within a prescribed layer thickness range. The active material layer has a local porosity thereof changed along a direction of the layer thickness. The rechargeable lithium ion battery further comprises a negative electrode and a non-aqueous electrolytic solution.

As recognized by the Examiner, the cited prior art does not suggest the claimed rechargeable lithium ion battery having a porosity of an active layer among a plurality of layers being lower closer to the collecting electrode. Applicants submit that Kawakami and Wang, whether taken alone, or in combination, do not disclose or suggest the active material layer having a local porosity changed along a direction of the layer thickness, as required by claim 19.

The dependent claims further distinguish the claimed invention. For example, claim 20 requires that the active material has the local porosity changed stepwise. Claim 22 requires that the first active material layer is formed with a first porosity and the second active material layer is formed with a second porosity layer changed from the first porosity. Claim 25 further requires that the first active material layer comprises particles having a first average particle size and the second active material layer comprise particles having a second average particle size different from the first average particle size. Claim 38 further requires that the first average particle size is set within a range of 0.1 μm to 5 μm and the second average particle size is set within a range of 5 μm and 20

µm. The cited prior art does not suggest the claimed rechargeable lithium ion battery with these additional limitations.

Allowable Subject Matter

Claim 5 would be allowable if rewritten in independent form and to overcome the indefiniteness rejection. Claims 6 and 12 were objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

Applicants gratefully acknowledge the indication of allowable subject matter. In accordance with the Examiner's recommendations, claim 5 has been rewritten in independent form and to overcome the indefiniteness rejection, as new claim 29. New claims 40 and 41 correspond to claims 6 and 12, respectively, rewritten in independent form.

In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case should be passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

Serial No.: 09/939,711

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Bernard P. Codd", written over the printed name.

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Amendments to the Drawings:

Amended Figures 1, 2, and 4 are attached on separate sheets. The Figures are amended to maintain consistency with the specification and to correct the use of duplicate reference numbers in the drawings. Support for the range correction r in Fig. 2 is found in the specification (page 8, line 2).